# MEMOIRS OF MAMMOTH

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# MEMOIRS

OF

## *MAMMOTH,*

AND OTHER

EXTRAORDINARY AND STUPENDOUS

# BONES.

NODDER

# MEMOIRS

OF

## *MAMMOTH,*

AND VARIOUS

OTHER EXTRAORDINARY AND STUPENDOUS

# BONES,

OF

## INCOGNITA, OR NON-DESCRIPT ANIMALS,

FOUND

*IN THE VICINITY*

OF THE

OHIO, WABASH, ILLINOIS, MISSISSIPPI, MISSOURI, OSAGE, AND RED RIVERS, &c. &c.

*PUBLISHED*

FOR THE INFORMATION OF THOSE LADIES AND GENTLEMEN, WHOSE TASTE AND LOVE OF SCIENCE TEMPT THEM TO VISIT THE

## LIVERPOOL MUSEUM.

*BY TH. ASHE, ESQ.*

"His Bones are as strong pieces of brass; his Bones are like bars of iron." JOB.

LIVERPOOL,
PRINTED BY G. F. HARRIS.
1806.

# INTRODUCTION.

A Gentleman who has passed several years in North America, and whose pursuit was the study of nature, has just returned to this country with several boxes containing objects of the highest interest to the curious and intelligent world. Conscious of the erroneous opinions which had been entertained respecting the stupendous Animal Remains found in Russia, Siberia, and the western climes, he bent his mind designedly to that particular investigation, and made researches for such materials as he knew to be necessary for the foundation of abstract truth, or reasonable hypothesis. The absence of such materials led the ingenious author of "*Notes on Virginia*," to various beautiful visions, but to no salutary or solid fact. From the same cause, the celebrated Doctor Hunter, and many others, have wasted infinite science on some favourite theory; and the world, from this wide and multifarious opinion, had to embrace, now one delusion, and

now another. Hence some thought the Bones were the remains of a giant. Many called them extraneous fossils; others regarded them as mineral substances; some said the animal was carnivorous; others as strenuously asserted it to be herbivorous, graminivorous, or mixed. At length wearied by the contest, mankind associated in one idea;—the bones were called "*mammoth bones*," without any respect to the difference in their character, and the contrasted sensibilites which such difference generates and inspires. But from the evidence of the extraordinary bones now collected, *and preserved for public inspection in the Liverpool Museum*, it is clearly demonstrated, that they are the remains of various stupendous incognita, or nondescript animals, of perfectly different propensities, dispositions, and manners of life.

*Box, No.* 1,

Contains the principal part of the head of a carnivorous animal. The jaws are entire, filled with grinders. The seat of

the muscles is traced along the nose, and, from their depth, must have given violent action to the nostrils and lips. Here is also a *maxillæ inferior* of the same kind of monster, but much larger, and of great weight and beauty.

*No.* 2,

Possesses the vertebræ, in high preservation. The *os sacrum*, and *coccygis* are connected by the ossification of the cartilage; and the bed of the coccygæi muscles are strongly visible. Through the cavity for the passage of the spinal marrow a man's arm can easily pass.

*No.* 3,

Has the *os ischium*, pelvis thigh, and leg bone. These bones are both ponderous and perfect.

*No.* 4,

Contains an object of inexpressible grandeur and sublimity. It is the foot of a clawed animal, possibly of the order of *feræ*, for the claws are sheathed and er-

tractile, in the manner of the cat, tiger, and lion. When this paw was dilated on its prey, filled with muscles, flexors, and cartilage, clothed with flesh, turgid skin, and hair, it must have covered a space of ground four feet by three. The animal to whom it appertained, with superior agility and ferocity to the tiger, with a body, too, of unequalled magnitude and strength, must have been the terror of the forest and of man. This monument stands alone. It has no competitor. It is the first and only one of such exorbitant magnitude ever discovered, or probably that ever will be.

*No.* 5,

Contains a rib, and fragments of ribs, not concave internally, but with the edges standing out, to give more energy, and to bear more resistance. From hence it would appear that the animal was endowed with the gift of contraction: his ribs closing together like the sticks of a fan, he could spring forward, or make a mighty leap. This box contains other

fragments, whose office in the frame is not sufficiently denoted for description.

*No.* 6,

Encloses four extraordinary bones. They defy the intelligence of the writer. He cannot discover what part they performed in the animal machine. He supposes them *femori* of some *incognitum* of great force, as is wonderfully expressed by the deep insinuosities in the bones, in which the tendon of the triceps, and other large muscles, three inches in diameter, could lie concealed.

*No.* 7,

Embraces the teeth of various animals, weighing from one ounce to ten pounds. The grinding surfaces denote the pursuits and passions of each animal. The large grinder, with parallel lines of enamel slightly indended, bespeaks the peaceable herbivorous animal, of the elephantine species. The ponderous grinder, with high double-coned processes, and interlocking fangs, denotes the cruel carnivo-

rous monster, lurking in the woods. The teeth with less indention than this, betray a mixed animal; and those which have still less indention, and which express a rotatory motion, show the animal to be graminivorous, and sometimes also mixed. This box contains twenty specimens of the above characters. Some of the teeth are elegantly stained, by the long and unremitting industry of nature; and some, from lying in contact with mineral substances, have obtained radiant and prismatic colours.

*No.* 8,

Contains about twenty four specimens of carnivorous grinders, of such variety of size that the animal's age can be followed from one to innumerable years. A process, which sunk into the *maxillæ*, is five inches wide, and the cones on the surface two inches deep. Some teeth exhibit nothing but the *cortex*, from which fire can be struck, and yet many are wasted by manducation. The canals, in which nerves and blood-vessels were lodged, are

perfect, and discover the great supply which prevented the waste of attrition, and made the teeth endure the compression of any hard body between the jaws. This box affords a rich contemplation.

*No.* 9,

Possesses the remains of an animal of the anterior world. Coming to a rock, which the naturalist had to spring, in following a vein of mineral, this grand object appeared under the deep explosion. It is the *defence* of an *herbivorous incognitum*, of ponderous volume, and amazing height. The *defence* in a state of perfection, must have been five hundred weight, implying a head of twelve hundred weight. The present fine subject, in a state of decomposition, weighs one hundred and fifty pounds, is twenty-five inches in circumference, and when (being in three parts) put together, is sixteen feet long. It is by no means in the form of that of the elephant; it makes a complete revolve, and appears as if the animal could have moved it at pleasure. The grain traverses

in diamonds, in the manner of the finest ivory, and the internal substance is as white as snow. Several thousand ages have only led this to a gradual decomposition. It may yet last many years; but must be touched with a trembling and a pious hand, by him who can admire the wonderful greatness and wisdom displayed in the operations of nature, and who can contemplate with rapture an object which, it is hoped, the vulgar will neglect, as "a dreary void."

*No.* 10,

Contains the tusks, *defenses*, or horns, of various animals. One may be attributed to the rhinoceros, another to the elephant, but none to the hyppopotamus or river horse. One appertained to a huge animal of the ox kind, and another to some mixed *incognitum*, of great stature. The *defense* is better than six feet; not running in a *spiral volute*, but rising nearly perpendicular, and turning off at the point. Such was never before found. The animal and his attributes are unknown.

# MEMOIRS

OF

## *MAMMOTH*,

AND OTHER

EXTRAORDINARY AND STUPENDOUS

## BONES.

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### MEMOIR I.

I VENTURE to invite the public attention to a subject, which has for several years excited considerable curiosity, but no profound or solid investigation. In accompanying me through this arduous duty, I trust you will not expect from me a rhetoric to admire, or an eloquence to applaud; *these* are endowments which the naturalist has neither leisure to cultivate, nor to acquire: therefore I aim at nothing but simplicity and truth, and shall even divest myself of such technical terms as may perplex the reason of those who are not desi-

rous of entering into useless refinements, or tedious abstractions.

Long has the greater part of mankind laboured under difficulties, which might have been avoided by an acquaintance with the discoveries of travellers and philosophers. During the study of most sciences, we notice improvements unknown to the majority of the people; and in no one have these become more conspicuous, than in the study of natural history, and particularly that portion of it which relates to the extinct animals of the immense and interesting continent of America.

Since the wild conjectures of deluded men were banished from the annals of natural history, the study has become one of the most useful and pleasing to all of a common understanding. The science is now characterised by a manner, hostile only to the pride of the pedantic scholar. I have the honor to open some of the most extensive scenes;—let their magnificence lead the intelligent. An entrance is desired, that the wonderful greatness and wisdom displayed in the operations of nature may be contemplated with rapture, in parts ne-

glected by the vulgar as a "dreary void." For my part, although imperious circumstances frequently compelled me to suspend my views, still I bring with me an undecayed sensibility to their attractions, and a determination to perform my duty with all the assiduity and zeal I am capable of exerting, and merited by your encouragement.

It is not a little to the honor of the present age, that so many gentlemen of liberal fortune and respectable families, declining the slippery paths of political ambition, have dedicated much of their time, and not a little of their wealth, to sustain the cause of science and of literature. This observation will undoubtedly, from the association of ideas, recall the names of Walpole, of Pennant, of Jefferson, and of Banks, to your familiar recollection;—painful recollection, which informs, that the two first are now no more!

Of the writers of natural history I only mention the names of those who have endeavoured to make themselves acquainted with the object of our immediate investigation. And yet how imperfect was the information they

obtained! It could not be otherwise. Sir Joseph Banks passed the greatest part of his life in anatomizing the smallest productions of nature, such as grubs and butterflies; the province of Walpole was equally confined; Pennant never left Great Britain; and Mr. Jefferson, though amply qualified by an improved, philosophic, and energetic mind, had not met with sufficient evidence to establish irrefragible and certain conclusions. Hence the variety of conjecture, and error of judgment, which, on this subject, so universally abound. The ruling passions of mankind are excited, and the future current of their lives frequently directed, by trivial circumstances. One of the greatest painters of the age was attracted by an irresistible impulse towards his art, by a perusal of a treatise on it; and Mr. Jefferson's Notes on Virginia, at an early period gave me a turn for natural history, which has never abandoned me, even to this middle period of life. His critical and philosophic remarks on the mammoth, excited my enthusiasm, but did not satisfy my judgment; and I determined to explore the country where the bones of so stupendous an animal were so frequently found. With this intent, I gained the Apelichean; de-

scended the Ohio; traversed the depths of the valley and the highest summit of the mountain; saw the Illinois, the Mississippi, and the Missouri; and at length obtained the completion of my wish, the ardent object of my prayer,—a collection of bones, vulgarly called *mammoth bones*, but which I shall treat on under separate heads.

Before, however, I go into details of this particular nature, it may be amusing to you, to hear the conjectures of those who have passed before me, and the authorities on which such conjectures were grounded.

It is now ninety years ago, since the first remains of this animal were found in America. They were then thought to be the remains of a *Giant!* The formation of the teeth, the under jaw, the singularity and size of the bones, and the difficulty of discovering what part they performed in the animal machine, led to this egregious error; which was augmented by that disposition to the marvellous, which emigration encourages mankind to feel. This absurd idea gave way to one, not more sound. These remains were called *extraneous fossils* by some, by

by others *mineral substances*. However, but few years elapsed, before numerous attempts were made by all nations to procure a satisfactory collection of bones. At length Mr. Peale, of Philadelphia imagined he had accomplished this great object. He dug up a parcel of bones in Ulster county, state of New York, formed a skeleton, and dignified it with the name of *mammoth*, a Russian term, from *memoth*, a word derived from the Arabic *mehemot*, signifying the *behemot* of *Job*. This word is applied to any animal of extraordinary bigness: for instance, *fyhl* is the Arabic appellation for an elephant of ordinary size; but when of uncommon magnitude, the adjective *mehemodi* is always added.

The skeleton exhibited by Mr. Peale is of the following dimensions:—

Height over the shoulders 11 feet; length from the chin so the rump 15 feet; from the end of the tusk to the end of the tail 31 feet; width of the hips and body 5 feet 8 inches; length of the under jaw 3 ft. 1 inch; weight of the same 63½ lbs; length of the thigh bones 3 ft. 7 inches; smallest circumference of the

same 1 foot 6 inches; length of the bone of the fore leg 2 ft. 9 inches; length of the tusks, *defenses*, or horns, 10 ft. 7 inches; circumference of one tooth 1 ft. 6¾ inches; weight of the same 4 lbs. 10 oz. The whole weighing about 1000 lbs.

Within the breast of this skeleton Mr. Peale, accompanied by a dozen of his friends, partook of a superb dinner.

The curiosity excited by this singular spectacle was augmented by the following tradition, then in circulation, and said to be delivered in the terms of a Shawanece Indian:—

" Ten thousand moons ago, when nought but gloomy forests covered this land of the sleeping sun; long before the pale men, with thunder and fire at their command, rushed on the wings of the wind to ruin this garden of nature; when nought but the untamed wanderers of the woods, and men as unrestrained as they, were the masters of the soil; a race of animals were in being, huge as the frowning precipice, cruel as the bloody panther, swift as the descending eagle, and terrible as the angel of night. The pines crashed beneath their

feet ; and the lake shrunk when they slacked their thirst. The forceful javelin in vain was hurled, and the barbed arrow fell harmless from their side. Forests were laid waste at a meal ; the groans of expiring animals were heard, and whole villages, inhabited by men, were destroyed in a moment. The cry of universal distress extended even to the regions of peace in the west, and the Good Spirit interposed to save the unhappy. The forked lightning gleamed all around, and loudest thunder racked the globe. The bolts of heaven where hurled upon the cruel destroyers alone, and the mountains echoed with the bellowings of death. All were killed except one male, the fiercest of the race, and him even the fury of the skies assailed in vain. He ascended the bluest summit which shades the source of many waters, and, roaring aloud, bid defiance to every vengeance. The red lightning scorched the lofty firs, and rived the knotty oaks, but only glanced on the enraged monster. At length, maddened with disdain, he leaped over the waves of the West, and at this moment reigns the uncontrouled monarch of the wilderness, in despite even of Omnipotence himself."

As the enthusiasm, awakened by the first discovery of these stupendous remains, began to subside, and as the effect of this sublime tradition must necessarily have yielded to reason and abstract enquiry, it was soon ascertained, that bones and skeletons of vast magnitude had been frequently found in Siberia, Russia, and Germany. Many specimens of them are to be seen in the Imperial Cabinet at Petersburgh; in the British, Doctor Hunter's, and the late Sir Ashton Lever's Museums, and in that of the Royal Society. Several eminent naturalists, as Sir Hans Sloane, Gmelin, Daubenton, Buffon, &c. are of opinion, that these prodigious bones and tusks are really the bones and tusks of elephants; and many modern philosophers have held the mammoth to be as fabulous as the centaur. The great difference in size they endeavour to account for, as arising in difference in age, sex, and climate; and the cause of their being found in those northern parts of the world, where elephants are no longer natives, nor even long exist, they presume to have arisen from hence, that, in the great revolutions which have happened in the earth, the elephants, to avoid destruction, have left their native country, and dispersed themselves where

ever they could find safety. Their lot has been different. Some in a longer, and some in a shorter time after their death, have been transported to great distances by some vast inundations. Those, on the contrary, which survived, and wandered far to the north, must have fallen victims to the rigour of the climate.

In the year 1767, Doctor Hunter had an opportunity of investigating more particularly this part of natural history; and has evidently endeavoured to prove, that these fossil bones and tusks are not only larger than the generality of elephants', but that the tusks are more twisted, or have more of a spiral curve than elephants'; and that the thigh and jaw bones differ, in several respects, from those of the elephant: but what appeared to put the matter beyond all dispute, was, the shape of the grinders, which seemed to belong to a carnivorous animal, or at least to an animal of the mixed kind. Some have supposed these bones to belong to the *hippopotamus*, or river horse; but there are many reasons against this supposition, as that animal is even much smaller than the elephant, and has such remarkably short legs, that his belly reaches within a few inches of the ground.

America seems to be the quarter where the *remains* in question most abound. On the Ohio, and in many parts further north, tusks, grinders, and skeletons of unparalleled magnitude, are found in vast numbers, some lying on the surface of the earth, and some a little below it. Mr. Stanley, taken prisoner by the Indians near the mouth of the Tenessee River, relates that being transferred thro' several tribes, he was at length carried over the mountains, west of the Missouri, to a river which runs westwardly; that these bones abounded there; and that the natives described to him an animal, to which they belonged, as still existing in the northern parts of their country. Bones of the same kind have been found in salines opened on the North Holston, a branch of the Tenessee about the latitude 36 north. Instances are mentioned of like animal remains found in the more southern climates of both hemispheres; but Mr. Jefferson observes, that they are either so loosely mentioned as to leave a doubt of the fact; so inaccurately described as not to authorize the classing them with the great northern bones; or so rare as to found a suspicion, that they have been carried thither as curiosities from more northern regions. "So that on the whole

(continues he) there seems to be no certain vestiges of the existence of this animal farther south than the salines last mentioned. It is remarkable, (he adds,) that the tusks and skeletons have been ascribed to the elephant, while the grinders have been given to the hippopotamus or river horse. And yet it will not be said, that the hippopotamus and elephant came always to the same spot, the former to deposit his grinders, and the latter his tusks and skeleton! For what became of the parts not deposited there?

"We must agree, then, that these remains belong to each other; that they are of one and the same animal; that this was not a hippopotamus, because the hippopotamus had no tusks nor such a frame, and because the grinders differ in their size as well as in the number and form of their points." That it was not an elephant he thought ascertained by proofs equally decisive. "I will not avail myself (he says) of the authority of the celebrated anatomist, Mr. J. Hunter, who from an examination of the tusks has declared, they were essentially different form those of the elephant; because another anatomist, D'Aubenton, equally celebrated,

has declared on a like investigation that they are precisely the same.

" Between two such authorities I will suppose this circumstance as equivocal. But, *first*, the skeleton of the mammoth bespeaks an animal of five or six times the cubic volume of the elephant. *2dly*. The grinders are five times as large, are square, and the grinding surface studded with four or five rows of blunt points; whereas those of the elephant are broad and thin, and their grinding surface flat. *3dly*. I have never heard of an instance, and suppose there has been none, of the grinder of an elephant having been found in America. *4thly*. From the known temperature and constitution of the elephant, he could never have existed in those regions, where the remains of the mammoth have been found. The elephant is a native only of the torrid zone and its vicinities: if, with the assistance of warm apartments and warm clothing, he has been preserved in life in the temperate climates in Europe, it has only been for a short portion of what would have been his natural period; and no instance of his multiplication in them have ever been known. But no bones of the mammoth, as I

have before observed, have been ever found farther south than the salines of the Holston, and they have been found as far north as the arctic circle. Those, therefore, who are of opinion, that the elephant and mammoth are the same, must believe, 1*st*, that the elephant known to us can exist and multiply in the frozen zone; or, 2*dly*, that an internal fire may once have warmed those regions, and since abandoned them; of which, however, the globe exhibits no unequivocal indications: or, 3*dly*. that the obliquity of the ecliptic, when these elephants lived, was so great as to include within the tropics all those regions in which the bones are found: the tropics being, as is before observed, the natural limits of habitation for the elephant. But if it be admitted that this obliquity has really decreased, and we adopt the highest rate of decrease yet pretended, that is, of one minute in a century—to transfer the northern tropic to the arctic circle would carry the existence of these supposed elephants 250,000 years back; a period far beyond the conception of the duration of animal bones left exposed to the open air, as these are in many instances. Besides, though these regions would then be supposed within the tropics, yet their winters

would have been too severe for the sensibility of the elephant. They would have had, too, but one night and one day in the year; a circumstance to which we have no reason to suppose the nature of the elephant fitted. However, it has been demonstrated, that if a variation of the obliquity in the ecliptic takes place at all, it is vibratory, and never exceeds the limits of 9 degrees, which is not sufficient to bring these bones within the tropics.

"One of these hypotheses, or some other equally arbitrary and inadmissible to cautious philosophy, must be adopted, to support the opinion, that these are the bones of the elephant. For my own part, I find it easier to believe that an animal may have existed, resembling the elephant in its tusks and general anatomy, while his nature was in other respects extremely different. From the 30° of south latitude to the 30° of north, are nearly the limits which nature has fixed for the existence and multiplication of the elephant known to us. Proceeding thence northwardly to 36½°, we enter those assigned to the mammoth. The farther we advance north, the more the vestiges multiply, as far as the earth has been explored

in that direction ; and it is as probable as otherwise, that this progression continues to the pole itself, if land extend so far. The centre of the frozen zone, then, may be the acme of their vigour, as that of the torrid is to the elephant. Thus nature seems to have drawn a belt of separation between these two tremendous animals, the breadth of which belt, indeed, is not so precisely known, though at present we may suppose it about 6½ degrees of latitude; to have assigned to the elephant the regions south of these confines, and those north to the mammoth, founding the constitution of the one in extreme heat, and that of the other in the extreme of cold. When the Creator has therefore separated their nature as far as the extent of the scale of animal life allowed to this planet would permit, it seems perverse to declare it the same, from a partial resemblance of the tusks and bones. But to whatever animal we may ascribe these remains, it is certain, that such an one existed in America, and that it was the largest of all terrestrial beings of which any traces have been known to appear." Such are the conclusions of the ingenious au thor of "*Notes on Virginia.*"

Since the publication of the "*Notes*," however, many additional facts have occurred, which favor the assigning a *wider* range to this incognitum; for in cutting the Santre and Cowper River Canal in South Carolina, there was turned up a collection of bones, answering by description to those of the mammoth. Their number, variety, and arrangement were such, as entirely to prelude the idea of their having been carried thither as curiosities. The following letter, from the most respectable authority, extends this range still wider:—

"*Washington*, 1804.

"SIR,

"It is with some interest that I have learned from the Baron Hombaldt, who has been five years travelling through South America, that among other curious animal remains, he has discovered several specimens of the mammoth, perfectly distinguished by the great carnivorous teeth. He found them as far as latitude 33 south, but always on the highest mountains; which the baron takes to be satisfactory evidence, that this great unknown must have been the inhabitant of a cold climate. In North America, none of those bones have ever

been found, but in comparitively low situations; this is to be expected of an animal, which in a cold climate, would inhabit the valleys, and in a warm one would seek the cold retreats of the mountains.

" Yours, &c.

" R. P."

Had the opportunities of Mr. Jefferson been greater than it appears they were, or, in other words, had his materials been less scanty, he would not only have given a larger circle for the range of this animal, but he would have discerned the remains of a *Second Incognitum*, whose stature was not, perhaps, inferior to that of the other. These second remains evince a member of the herbivorous order, and, notwithstanding the extraordinary size, I have no hesitation in believing, that the animal was of the genus of the elephant; that he was the mammoth of the Russians, the mehemodi of the Arabians, and the behemoth of Job.

I conceive the word *behemoth* signifies *the beast*, by way of eminence, or the greatest among beasts.

The characters in the 40th chap. of Job, from the 16th verse to the end, appear highly applicable to a distinguished order of the elephant.

"Behold now behemoth, which I made with thee; he eateth grass as an ox."

The simile, *as an ox*, leads one to suppose some analogy in form. Accordingly the Romans called it *Bos Luca*, the Lucanian beeve; Lucania being that part of Italy into which Pyrrhus, in his war with the Romans brought them, and where the Romans first saw this creature.

"Lo now, his strength is in his loins, and his force in the navel of his belly.

"He moveth his tail like a cedar; the sinews of his thighs are wrapped together.

"His bones are as strong as pieces of brass; his bones are like bars of iron."

This description is too strong for any other animal than the elephant; no other can enter

into competition with him for the largeness and iron-like strength of his ribs, spine, and thigh bones.

" He is the chief of the ways of God's productions ; he that made him can make his sword approach unto him.

" Surely the mountains bring him forth food where all the beasts of the field play."

Three characters of the behemoth are mentioned here. 1. He frequents the mountains. 2. The mountains supply him with food. 3. He is a gentle and sociable animal.

The elephant will graze freely with other animals, whether wild or tame. Among the latter, if they are near enough to be hurt by his sudden movement, he puts them gently by with his proboscis.

" He lieth under the shady trees, in the covert of the reeds, and fens.

" The shady trees cover him with their shadow ; the willows of the brook compass him about."

These verses describe the behemoth's places of shelter and repose, and, in such places, in general, are his bones found in America at this day.

" Behold he drinketh up a river, and hasteth not; he trusteth that he can draw up Jordan into his mouth."

What is here said seems to convey a sublime idea of the lofty stature, great force, and intrepidity of the behemoth.

" Behold a river overfloweth, yet he maketh not haste; although Jordan break out against his mouth, he is in security."

I may remark in this passage, that the common height of the elephant is 10 ft. and a half. There were some in the stables of Coarees, King of Persia, twelve cubits high. A credible traveller, Sir T. Roe, assures us, that in Indostan he had seen some that were at least 12 ft. high, and was informed, that there were others 14 or 15 ft. in height. The elephant, therefore, can ford most rivers. The Jordan is here mentioned, not as frequented by ele-

phants, but only as put for any deep and violent river: for such the Jordan is in the time of its overflowing.

"He taketh it with his eyes; his nose pierceth through snares."

Job is here called upon, in the most humiliating irony, to try his courage on this large and powerful creature, to take him by open force, and guide him, when taken, with a cord, as he used to manage his camels.

"Let a man take him openly, let him draw a cord through his nose."

The second sentence alludes, I imagine, to the hair noose, or ring, which the Arabs put through the nose of their camels; and by which a line being fastened to it, they bring them to their beck.

The following version of Job's description appears too interesting to be disregarded. I trust you will agree with me in this opinion:—

Behold my behemoth, his bulk uprear,
Made by thy Maker, grazing like a steer.

What strength is seated in each brawny loin!
What muscles brace his amplitude of groin!
Huge like a cedar, see his tail arise;
Large nerves their meshes weave about his thighs;
His ribs are channels of unyielding brass,
His chine a bar of iron's harden'd mass:
My sovereign work; prime of the bestial kind,
In power of body, and in gifts of mind.
I, with a tusky falchion, armed his jaw,
His foe to humble and the desert awe:
In peaceful majesty of might he goes,
And on the mountain tops his forage mows;
Where beasts of ev'ry savage name resort,
And in wild gambols round his greatness sport.
In moory vales, beside the reedy pools,
Deep plunged in ooze, his glowing flanks he cools:
Or in umbrageous groves enjoys repose,
Or bower'd in willows, where the torrent flows.
Not swelling rivers can his heart dismay,
He stalks secure along the wat'ry way.
Should Jordan heap his overflowing waves
Against his mouth, the foaming flood he braves.
Go now, thy courage on this creature try,
Dare the bold duel, meet his open eye,
Sublime on thy gigantic captive ride,
And, with a slender string, his vastness guide.

I now proceed to exhibit the parts which more decidedly mark the remains of the behemoth: they consist, 1*st*, of grinders exclusively worn by animals of the herbivorous or gramini-

vorous kind; *2ndly*, of tusks differently fashioned; and *3rdly*, of bones of an extraordinary magnitude, belonging thereto.

Both the skeleton of the behemoth, and of the stupendous carnivorous incognitum on which I propose to treat in my next memoir, being frequently embedded in company, they have hitherto been confounded together by writers, under the single appellation of mammoth bones: though their appearance and character essentially differ, and distinctly point out two animals of the herbivorous and carnivorous kinds.

The teeth alone unquestionably bespeak this. The masticating surface of the mammoth tooth is flat, nearly smooth, and ribbed transversly, somewhat like the elephant's grinders, but less prominently marked. There are from 15 to 20 of these transverse lines on a single tooth of the mammoth; while, on that of the elephant, they seldom exceed half the number. The masticating surface of the tooth of the carnivorous incognitum is set with four or five high double-coned processes, or studs, strongly coated with enamel. But I refer this

latter subject to the following memoir ; and now beg to recall your attention to what remains to be said on the wonderful subject of our recent speculations. That such an animal did exist in this country and in considerable numbers is certain. The benevolent persuasion, that no link in the chain of creation will ever be suffered to perish, has induced certain authors of distinguished merit, to provide a residence for the mammoth in the remote regions of the north. Some of the North American Indians also believe in the now-existence of this animal, and place him far beyond the Lakes. But their belief rests on mere tradition: for none of them will venture to declare they have seen the animal themselves, or that their information concerning him is drawn from any person who has seen him. The truth is, their tradition does not relate to the mammoth, though it very forcibly applies to the carnivorous incognitum to which I have so often reverted, and with which you will shortly become acquainted. There is considerable evidence, that the behemoth, or mammoth (which I shall in future call it, in compliance with custom) has not been in existence in America for several hundred years. There is no entire ske-

leton of so large an animal, *with herbivorous grinders*, extant; nor have I met with any of its bones in a state of preservation, but such as had been affected by salines and salt. The tusks and grinders alone remain: they in some degree resist the corrosion of time; though I lament to observe, that exposure to external air hastens them to a too sudden decay. The bones of this animal have never been found on the surface of the ground,—but sometimes 12 ft. underneath it,—and in one instance, below a lime-stone rock of immense solidity, which had *grown over them*, in the natural process of some thousand years!

For want of the evidence of the real herbivorous grinders, and in consequence of the inclemency of this hemisphere, Mr. Jefferson could not admit of the existence of an animal, of the genus and sensibility of the elephant, in America; nor could I, were I not firmly convinced from my own careful observations, and the remarks of a celebrated author, M. Volney, that the climate and face of nature is entirely changed. For there is no doubt, that the whole scope of country from above a range of mountains which cross the

Ohio somewhere below the Falls, as high up as Pittsburgh and bordering Lake Erie, was once overwhelmed with water, forming an immense lake; that the summit of those hills was sufficiently high to do this; and that by some great convulsion of nature this barrier was rent to its base, and the waters being thus let loose, the lake above was drained, and the floods, entering from all parts of the higher to the lower grounds, formed the bed of the river now called Ohio. That this immense body of water was salt, appears evident from the immense quantity of coral every where to be found in the presumed bed of this lake; from the remains of submarine plants, fossils, and minerals; and from the bones and petrifactions of animals, which we know look for their appropriate aliment in the sea.

So great a change in the aspect of nature considerably influenced the climate, and, in proportion with its degeneracy, the mammoth pined and ultimately perished.

But admitting the assertion of that distinguished philosopher and statesman, Mr. Jefferson, that the sensibility of the elephant could

never have endured the inclemency of these regions, I will presume to touch the subject on a new ground, and allow it possible, that in consequence of some immense revolution in a more southern climate, the mammoth migrated into this, notwithstanding its being so inimical to his pursuits and affections. And where could this great revolution have happened? Perhaps on the very theatre of Mr. Jefferson's happiest visions,—when he says, "While ruminating on these subjects, I have often been hurried away by fancy, and led to imagine, that what is now the Bay of Mexico was once a campaign country, and that from the point, or cape of Florida there was a continued range of mountains through Cuba, Hispaniola, Porto Rico, Martinique, Guadaloupe, Barbadoes, and Trinidad, till it reached the coast of America, and formed the shores which bounded the ocean, and guarded the country behind; that by some convulsion, or shock of nature, the sea had broken through these mounds, and deluged that vast plain, till it reached the foot of the Andes; that being there heaped up by the trade winds, always blowing from one quarter, it had found its way back, as it continues to do, through the gulph, between Flo-

rida and Cuba, carrying with it the loam and sand it may have scoped from the country it had occupied; part of which it may have deposited on the shores of North America, and with part formed the banks of Newfoundland."

But I weary your attention: honor me with it, however, till we draw from matter so diffuse a few dialectical and useful conclusions.

I have endeavoured to prove, *first*, that bones found throughout America, and commonly called mammoth bones, are the remains of more than one species of non-descript animal; 2*dly*, that the real mammoth is a large order of the elephant according with the behemoth of Job; 3*dly*, that in consequence he is herbivorous, as manifested by his tusks and grinders;—4*thly*, that this climate was once congenial to his nature, though now so adverse to his pursuits and sensibilities;—5*thly*, that had the climate never suited his affections, still he might have migrated to this country, to avoid some shock of nature in his own; and 6*thly*, that the two last axioms lead to a conclusion, that this superb animal exists no more, or that he is only to be found in some of the remote

southern parts of the vast continent of America, yet unpenetrated and unseen.

It may now be asked, whether I have in this memoir, gratified the expectations of the public? Whether I have shed any light on a subject hitherto involved in gloom? And whether I have given all the information which your curiosity may demand, your reason suggest, or your fancy require? Too well convinced of the limits of the human understanding, and of the bounds set to my own, I dare not answer in the affirmative. Much may have escaped my observation and my research: being engaged in travel for several years, or living in parts destitute of books and improved associations, I was denied the assistance, drawn by other naturalists, from such materials, and was compelled to give you unembellished suggestions of my own mind—a mind injured by amalgamation with inhabitants of untutored wastes, where sensibility to grace is soon lost, where felicity of style cannot be gained, and where literary pursuits become at length forgotten!

To merit indulgence, I shall exert all my energies to give my next memoir the interest

you may consider absent from this. The subject matter will be,—the great *Megalonyx*, the monstrous lion of the Greeks; the cruel carnivorous animal of this western world, who was "huge as the frowning precipice; cruel as the bloody panther, swift as the descending eagle, and terrible as the angel of night!"

## MEMOIR II.

I FEEL considerable encouragement to proceed in my views, both from the attention with which you distinguished me, and from a reasonable confidence that you are conscious of the difficulties so arduous an undertaking must be exposed to meet. You have the goodness to consider, that it is not with the sciences as it is with the arts. Aided by genius, a Titian or an Angelo, can at one flight reach the summit of his art; but whatever capacity you allow to a naturalist, still, in the wastes of science, he can only advance step by step. In his way he has absurdities to engage, and prejudices to conquer, which require faculties not always at command, and at a time perhaps otherwise to be employed. The principal obstructions which are to be met with in this investigation arise out of the variety of opinions which it has hitherto given birth to. It is necessary to review them.

Those stupendous remains, as I observed

in my first memoir, have been attributed to a giant; to the hippopotamus; to the elephant; to some carnivorous animal; and to some evil spirit, or devil.

This perversion must be owing to the neglect of natural history, or to the insufficient and mutilated evidence alone within the reach of those whose knowledge is contained in their closets, and who have never visited the haunts, or become acquainted with the passions, of the animals whose classification and properties they affect to give. Hence a tooth sent to Paris; a tusk to London, and some mixed fractions to Philadelphia, decide a different character; to which, however, indolence, and the terror attending active enquiry, have assigned the general name of mammoth.

Concerning the real origin of so terrific an animal as the megalonyx, various discordant, contradictory theories have been heard, equally repugnant to common sense, and the principles of sound philosophy. Concerning his early existence I may plead the general tradition of the most ancient nations, and of his present existence I feel unwillingness to doubt. There

appears to be an order in the proceedings of Omnipotence, as regards creation, which we should not break. What a beautiful gradation! In creation there are no chasms; all the parts of it are admirably connected, to make up one universal whole; there is one chain of beings, from the lowest to the highest. The scale of creation does not advance by leaps, but by gentle steps. One rises gradually above another; dead matter, unorganized earth, minerals, vegetables, insects, reptiles, birds, beasts, and man! The truth is, as observes the philosophic author of the "*Notes*," that a pigmy and a Patagonian, a mouse and a mammoth, derive their dimensions from the same nutritive juices. The difference of increment depends on circumstances unsearchable to beings with our capacities. Every race of animals seems to have received from their Maker certain laws of extension. Their elaborative organs were formed to produce this, while proper obstacles were opposed to its further progress. Below these limits they cannot fall; above them they cannot rise. What intermediate station they shall take may depend on soil, on climate, on food, and on a careful choice of breeders. Therefore we are neither to be astonished at the wide and

material difference in animal bulk, nor to encourage the theory of partial extinction: especially we may presume, that the wise Creator of every thing would not suffer so great a link in the chain as the megalonyx to be entirely broken off. He continues every created species, nor can they cease while the earth remaineth, any more than seed time and harvest, cold and heat, summer and winter, day and night.

But to proceed in the manner of my first memoir, I shall revert to the observations of others, before I intrude on you those of my own.

Stralenberg relates, that an entire skeleton of an incognitum was found in Siberia, near Lake Izana Osero; that it was 36 Russian ells long; and so great was the distance between the opposite ribs, that a man standing upright on the concavity of a rib, as the skeleton rested on its side, could not quite reach the opposite one, even with the aid of a pretty long battle axe, which he held in his hand. This account is given as coming from the mouth of the man himself, and who was one of thirty others all eye-witnesses of the fact. Dr. Misserschmidt

had seen the bones of a whole skeleton of a monstrous size, lying in a ditch between Tomskoi and Kasmtsko, on the banks of the river Tomber. Stralenberg also says, that he saw at the city of Tumeer, a skull 2½ ells in length, but this the Russians informed him was one of the smallest size. Muller and Isbrandes Ides go farther, and describe the colour, structure, &c. of some huge incognitum. But what credit can be given to such idle stories, when Ides himself confesses, that he knew of no person that had ever seen a living animal of such extraordinary magnitude?

The fathers of the ancient church thought it to be the devil, and others the elephant. The rabbins affirm, that it is the largest four-footed creature that God has ever created; that in the beginning he made two, the male and the female; the female he killed and salted, to reserve it as an entertainment for the elect, whenever the Messiah shall come; and that the male is still living, which, when this time comes, God will kill also, and give it to the Israelites, who shall then arise from the dead. As a proof of these extravagancies, they often swear by the share they expect in the "great beast."—

Such have been the efforts to deversify the same object: one sect considered it a leviathan of unwieldy bulk, spouting torrents of brine through its spiracles; while another butcher, and pack it in a tub.

It can answer no good purpose to follow this course any farther; and yet I entreat you to return with me to the Shawanece's tradition, notwithstanding my having observed that little faith could be put in it: traditions in general are so clouded with fable, as to obscure any truths they may happen to contain.

However clouded the sublime tradition of the Shawanece Indian may be with fiction, still my experience has discovered a considerable degree of truth to prevail in it. I early discovered, that the description pointed at some stupendous voracious animal; cruel, fleet, and capable of bounding suddenly on his prey. Furnished with carnivorous teeth to consume, and with claws to rend and destroy: in short, a monster of the tiger line, endowed with every bloody and malignant property, and differing in every character but bulk from the mammoth, whose qualities I so lately defined.

I also concluded, that the flat-surfaced grinders, the *defenses*, or tusks, belonged to one and the same animal, of the herbivorous order; and that the teeth, studded with high double-coned processes, would be found to belong to a carnivorous animal, armed with *claws:* in fact the nature of his pursuits would require them: of a form too unwieldly to range thro' the woods, he would have to lie in wait, and spring unexpectedly upon his prey. To effect this act, claws are necessary, and I believe it is a law of nature, that all carnivorous animals should possess them. Whereas tusks, *defenses*, or horns, would be incompatible with the pursuits of such a creature; would retard his progress through the woods, and gather too much wind when coursing his prey in the plains.

These opinions were considerably confirmed: the American philosophical society received a collection of bones here treated of, and among them, the *os calois*, or heel bones, of a clawed animal. This testimony, so flattering, so precious, and so ample to me, served as a subject of mere contention to others: a war ensued. Anatomists entered the lists; philosophers multiplied; and yet the question

remained undecided. The pride of man would not allow a single bone, one small bone, to beat down the edifice his errors had been so long erecting! The advocates of the hippopotamus; of the elephant; of the extraneous fossils; of any herbivorous animal, or of any aquatic one, became confounded, but not convinced. A species of commutation followed, and teeth, tusks, hoofs, and claws, were pitched together, to compose one animal. Not content with this arrangement, I abandoned the scene, and visited the regions where the object of dispute was said to abound; those plains he had once devastated; those lakes in which he had once slacked his thirst.—I soon discovered that I had chosen the proper theatre for the decision of the question.

Nature having blessed these transmontane regions with a bountiful supply of *salines*, or springs of salt water; the earth *there* being soft or spongy, and impregnated with mineral salts is rendered peculiarly fit for the reception and preservation of certain bodies, which, in other places, would undergo a speedy decay. Hence the profusion of large bones beyond the mountains, while on the Atlantic side of them, where

salines are scarce, such remains have but rarely been found. Between the Wabash and the Illinois, a considerable space of a plain is occupied with bones of all descriptions, some on the surface, and some beneath the ground. At a considerable distance back of St. Louis, in Upper Louisiana, there is a large parcel or body of both animal and human bones, mixed altogether promiscuously, over a space of ground of 300 yards, some lying, and others sticking up. Some of the largest order were presented to the Baron Carondolet, while in that country, who pronounced them to belong to an elephant.

Upon either margin of the Big-Bone-Lick, which is a shallow stream of salt water, in the state of Kentucky, flowing into the Ohio, there lies a stratum, extending a considerable distance, composed entirely of the bones of the buffalo, elk, deer, and other smaller animals, as alluded to in the Indian tradition, where it beautifully observes, "the groans of expiring animals were every where heard." But, judge of my surprize, when attentively examining the bones, I discovered, that almost every one of any length, had received a fracture, occa-

sioned, undoubtedly, by the teeth of some carnivorous animal, while in the act of feeding upon his prey. It is well known that the buffalo, deer, elk, and a variety of other animals, are in the constant habit of making such places their resort, in order to drink the salt water, and lick the impregnated earth. Now, may we not from these facts infer, that nature had formed some huge voracious animal, to whom she allotted the beasts of the forest for his food? How can we otherwise account for the numerous fractures that every where mark these strata of bones? May it not be inferred, too, that as the largest and swiftest quadrupeds were appointed for his food, he necessarily was endowed with great strength and activity? That, as the immense volume of the creature would unfit him for coursing after his prey through thickets and woods, nature had furnished him with the power of taking a mighty leap? That this power of springing to a great distance was requisite to the more effectual concealment of his bulky volume while lying in wait for his prey? Is not the Author of Existence wise and just in all his works? Would he confer appetites, and withhold the powers capable of obtaining their gratification?

With the agility and ferocity of the tiger; with a body of unequalled magnitude and strength; this monster must have been the terror of the forest, and of man! And—what monster?——It is true, carried away by an enthusiasm, inspired by the subject, I have not waited to tell you, that such a one did in fact exist. Filled with a strong conviction of his existence, I sought for evidence; I spared no labour; I dug all around, and at length drew from the reluctant earth the remains of a huge carnivorous animal, furnished with high-coned teeth, armed with claws. In fine, "huge as the frowning precipice, cruel as the bloody panther, swift as the descending eagle, and terrible as the angel of night," must have been this tremendous animal, when clothed with flesh and animated with principles of life!

The ruins of *a portion* of his head weigh nearly 200lbs. From the enamel of the teeth, fire can be struck! and the skull must have been 12 inches thick, forming a forehead 4 feet over!

The *scapula*, or shoulder blade, when seen in the earth, was large as a breakfast table; the

decay was too great; on moving it, it fell to pieces.

The *vertebræ* which are seen, shew the spinal marrow to have been 5 inches in diameter! Is not this extraordinary? Not seen, would the tale be credible?

The huge leg and thigh bones, how monstrous, how massive!——What muscles must have filled the inflexions—the wide and hollow insinuosities? And the fragments of ribs! how admirable their construction! Bent on the edge, they are eminently calculated for strengthening a frame ordained to subsist by the destruction of other animals, both active and powerful.

But, above all, I beg your attention to the claw. It is sheathed and retractile; denoting an animal of the lion kind. Justified by principles of anatomy I calculate, that, when extended on its prey, it must have been nearly 4 ft. long by 3 ft. wide, allowing that long and firm membranes interposed between the bones and toes.

There is a beautiful mechanism in the whole of this. The toes were drawn together, or bended, when the paw was bent: this was owing to the shortness of the tendons which pass over the toes, and from the toes being set in the circumference of a circle, as our fingers are. Therefore, when the paw was bent, the tendons would consequently be much stretched; and, since they are inserted into the toes, must of necessity have bent them when the foot was bent; and when the paw or foot was extended, the flexors would again relax, and allow the toes to become expanded,—to seize its prey, rend, and annihilate it.

From this rapid review of these majestic remains *it must appear, that the creature to whom they belonged was nearly* 60 *feet long, and* 2 *feet high!*

Being armed with claws, sheathed and retractile; having the powers, from the formation of his ribs, of extending and contracting his body to a great degree, in order to make more prodigious bounds; and appearing to be endowed with the passions and appetites of the

lion; I have ventured to distinguish him under that genus, and have called him the *Megalonyx*, after the Greek, which signifies the great lion.

However presumptuous this step may appear, I found it essential to take it; in order to avoid the vulgar error of calling it "mammoth," a term already bestowed on an animal of the elephantine species, as heretofore proved, and of the herbivorous nature. Besides, in a place which abounded with bones, I found it absolutely necessary to have some system of classification. For, in fact, I discovered remains of no less than *six* species of incognita; three of which I have not as yet defined. But would it be wise to blend them all together, and, to save the labour of investigation, to involve them all in the name of mammoth? In my first memoir I gave my motives for affixing this name to one particular animal, whose properties I described;—and in this, I give the name of *megalonyx* to another, whose capacities I shall further explain. In zoology, this name will, I imagine, class under *felis*, a genus of quadrupeds belonging to the order of *feræ*, the principal characters of which are these,—the fore teeth are equal, the molares,

or grinders, have three points; the tongue is furnished with rough sharp prickles, pointing backwards; and the claws are sheathed and retractile. This genus comprehends twenty two species, including the megalonyx.

It is said, that in warm countries quadrupeds are larger and stronger than in cold or temperate climates; that they are likewise more fierce and hardy: all their natural qualities corresponding with the ardour of the climate; that the lions nourished under the scorching sun of Africa, or the Indies, are strong, fierce, and terrible; and that those of Mount Atlas, whose top is sometimes covered with snow, are neither so strong nor so ferocious as those of Belledulgired or Zaara, whose plains are covered with burning sands. We have now, however, reason to doubt the justice of these observations, and to conceive, that other causes concur to inspire courage and repress vigour, than the influence of heat and cold. Do we not know—are we not convinced—that an animal of the lion's sensibilities, but far superior to him in magnitude, ferocity, and strength, was once the dread and scourge of all the western world! And what has become of him?

Satisfied of his *once* existing, this question becomes a profitable enquiry.

All noxious quadrupeds hasten to banishment, apparent extinction, or rapid decline. ——The Romans brought many more lions out of Libya, for their public shews, than are now to be found in that country. It is likewise remarked, that the lions in Turkey, Persia, and the Indies, are now much less numerous than formerly. As this formidable and courageous animal makes a prey of most other animals, and is himself a prey to none, this diminution in the number of the species can be owing to nothing but the increase in the number of mankind: for it must be acknowledged, that the strength of the lion is not a match for the dexterity and address of a Negro or a Hottentot, who will often dare to attack him face to face, and this too with very slight weapons. The ingenuity of mankind augments with their number; that of other animals continues always the same. All the noxious animals, therefore, are reduced to a small number, owing as well to the increase of mankind, as to the increase of ingenuity, which has invented weapons that nothing can resist.

These reasons apply to the fall of the megalonyx; with this addition, that as he was so terrific and devastating a disturber, the human race might have made his extirpation a common cause; or his numerous and powerful enemies of the forests might have operated to this effect. There is no question, but that the mammoth was his perpetual rival, and avowed adversary. Wherever they met, they fought; and wherever they fought, one or both fell. Their bones, to this day, are found mingled together on the same surface, or buried deep in the same hole. I hardly know an instance of their being found separately, and where they are so, they have most probably been dragged into such situations by creatures, who dreaded to approach them while alive. But how long the megalonyx has existed, or ceased to exist, in America, we shall perhaps ever remain in ignorance of. No judgment can be formed from the quantity of vegetable soil which has accumulated over his bones. Certain we are, that his species existed in great abundance, from the number of their remains. Perhaps they were destroyed by some sudden and powerful cause,—probably one of those changes, or sudden eruptions of the sea, which

have left their traces in every part of the globe; and which are in amazing abundance on the very spot where these bones are found. They consist of petrefactions of sea productions, shells, corals, &c. It is probable, too, that whenever, and by whatever means, the extirpation of this tremendous race of animals was effected, the same cause operated in the destruction of all those inhabitants, from whom we might have received some satisfactory account of them.

Whether the race is extinct, or whether, as the Indians allege, it still exists beyond the lakes, remains, then, undecided. I am reluctant to think that so grand a monument of All-creative Power would be allowed to be effectually and entirely destroyed! And yet a conclusion may be drawn in favour of its annihilation. The scriptures tell us, that "in the beginning, to man was given the dominion over the fish of the sea, over the fowls of the air, and over every living thing that moved upon the earth." Could the present race of man govern the Megalonyx, supposing he existed in the abundance we are authorised to conceive he did? Certainly not. Therefore, to fulfil an

ordinance in favour of mankind, the race might have been destroyed.

Or, perhaps there has been in this tyrannic animal's day a race of people who had as complete a dominion over that astonishing being, as the present race have over the animals of the present time! If so, what ideas can we have of them? And "how have the mighty fallen!" Here language fails; and man, poor short-sighted man, is lost in clouds of amazement and uncertainty: while, like the poet, we must

> Once more search, undismay'd, the dark profound,
> Where Nature works in secret; view the beds
> Of mineral treasure, and the eternal vault
> That bounds the hoary ocean; trace the forms
> Of atoms, moving with incessant change,
> Their elemental round; behold the seeds
> Of being and the energy of life,
> Kindling the mass with ever-active flame:
> Then to the secrets of the working mind
> Attentive turn; from dim oblivion call
> Her fleet, ideal, band; and bid them 'go
> Break thro' Time's barrier, and o'ertake the hour
> That saw the heav'ns created; then declare
> If ought were ever found in those external scenes
> To move thy wonder now!' For what are all
> The forms which brute, unconscious matter wears,
> Greatness of bulk, or symmetry of parts!

I did not wish to break the train of my own arguments, by introducing the opinions of those, whom I know to be adverse to mine. A love of truth, however, and a desire to give all the information within my means, lead me to notice those opinions.

Bishop Maddison, a gentleman of research and distinguished information, affirms, that the incognitum with the studded grinders is an animal of the herbivorous order. Permit me to give his own reasonings.

"Among rude nations, ignorance and credulity have eagerly embraced and perpetuated extravagant tales, respecting the mammoth. The Siberians assert, that it lives under ground; and the North-west Indians have hurled against it the thunder-bolts of the Great Spirit, so as to make the monster spring over the Wabash, the Illinois, and the Great Lake, where he is now confined! In the scientific world, two dissimilar principles, scepticism, and the bold spirit of conjecture and system, have produced mistakes, perhaps no less extraordinary. At first, the remains alluded to were, by some naturalists, attributed to the elephant, whilst

others advocated a just claim of the hippopotamus to the same. When, in process of time, the light, thrown on the subject by comparative anatomy, determined that they must have belonged to a non-descript animal, distinct from either,—a doubtful point still existed, and invited the attention of the inquisitive.—"Was that animal carnivorous or herbivorous?" Each side of the question long boasted illustrious supporters. Dr. Hunter declared the unknown animal, *carnivorous*. His opinion became mostly prevalent. By some, however, who were unwilling entirely to abandon a favourite idea, it was contended, that he was an animal of the *mixed kind;* that is, capable, like man, like the monkey, the hog, &c. of feeding both upon flesh and upon vegetable substances. But most adopted Hunter's idea, without any modification, and declared the animal positively and exclusively carnivorous. After the decision of this point, curiosity and investigation were excited by another topic of enquiry. This was, to ascertain the element on which he lived in general. Some considered it a *terrestrial* animal; others, from certain indications in its structure, pronounced it *amphibious*, and consigned to it shell-fish, as its favourite food."

The fact contained in the following communication strongly, we might say victoriously, militates against the carnivorous doctrine.—— And facts, says Bishop Maddison, summon the discordant opinions of philosophers before an unerring tribunal, from which there can be no appeal:—

" The question, whether the incognitum was a carnivorous or an herbivorous animal, has long divided naturalists: ingenuity, supported by analogy, afforded specious arguments for either opinion. One fact, which the bosom of nature had concealed, but which human industry has brought to light, has removed every doubt. In digging a well, in a place which afforded indications of marine salt, a passage was made through the contents of the stomach of a vast animal! The novelty of the substances, thus found, excited attention. They were carefully examined, and seemed to be half masticated reeds, and twigs of trees, with grass; whilst the bones of the beast, which were dug up at the same time, and which lay contiguous to these substances, evinced, that they had been the contents of the animal. These contents are in a state of high

preservation; have been seen by hundreds; and were found, together with the bones, resting on a limestone rock, about 5½ feet below the ground, in the county of Wythe, in Virginia. A part of the contents, with the whole skeleton, are to be forwarded to William and Mary College."

There is a rational scepticism, justly recommended by the great Bacon to the lovers of knowledge. Philosophical doubt ought to be carried into every department of science. Repeated experiments, accumulated facts, long and attentive observations, can alone imprint on our theories the sacred seal of truth, and establish our opinions on a permanent basis. And surely you will agree with me, that, according to these remarks, finding a few crushed vegetable substances blended with bones of an animal, is not a sufficient criterion for the discovery of his properties and affections. Besides, a variety of circumstances might have concurred to place the supposed contents of the stomach in the situation they were found. An expiring animal of ferocity and force might have torn and masticated every substance within his reach; —or the matter collected by Bishop Maddison

might have been the contents of the stomach of an herbivorous animal, the carcase of which might have lain under the body of the carnivorous creature with whom it fought, and with whom it fell. For there is no doubt, but that a fixed and perpetual enmity reigned between the mammoth and the megalonyx. Their remains evince this; they are constantly found together; and as we are sufficiently convinced that their pursuits and sensibilities differed, we must ascribe this present union to their former hatred and animosity. I am asked, how it happens, that where the bones of both animals have been embedded together, those of the megalonyx alone principally are found, while those of the mammoth are scarcely discernible? The answer is plain. The bones of all herbivorous animals are, from their nature, subject to decay infinitely sooner than the bones of carnivorous creatures, which are more durable and capable of resistance. Hence, where the mammoth and megalonyx expire together, the bones of the latter may be found entire, and none of the former but its tusks;—which being made of ivory, bid equal defiance to the attacks of time.

Therefore, on the whole, we cannot agree to consider an animal, endowed with carnivorous grinders, to be herbivorous, on the mere ground, that mashed vegetable substances were found in the vicinity of his bones! It would be catching at straws, to support a theory, to me entirely inadmissible. I could prefer meeting the doctrine of those who suppose the animals of a mixed nature; though I have no intention to abandon my own, that he is carnivorous, and unmixed. It is true, notwithstanding, that the lower jaw is furnished with but four teeth, two on each side; and being unassociated either with *incisores* or *canine*, it might be inferred, that his nature was not wholly carnivorous, but mixed;—and that a being, whose existence would require such an immoderate quantity of animal food, might, under circumstances of necessity, be indued with the faculty of subsisting on vegetable substances. As the idea is not unreasonable, I shall not oppose it, though I am far from being of the belief myself.

I shall also be accused of placing an animal of such extreme volume under the genus of

the lion, whose bulk is comparatively small. But is not the diminutive domestic cat of the lion species? May not the lion's race soar as much above, as this degenerate creature sinks beneath. him? Or why is it, that the human mind will admit of mean and contemptible associations, and reject those that are sublime and grand? Are there not a mini, and a whale; a humming bird, and a cassawary; a mouse, and a mammoth; a dwarf, and a giant? Yes. On the same principle, then, we admit a cat, and a megalonyx. It is not the *size* which determines the genus, but the qualities, pursuits, and affections. The size varies more considerably in the lion, than in any other species.—M. de la Landemagon assures us, that he has seen a tiger, in the East Indies, 15 feet long, including, undoubtedly, the length of the tail, which, supposing it to be four feet, makes the body of the tiger eleven feet in length!

A skeleton, preserved in the cabinet of a French King, indicates, that the animal was 7 feet long, from the point of the muzzle to the origin of the tail; and it must be considered, that he was caught young, and lived in confinement all his days.

There is in some parts of India a popular notion, that the rhinoceros and the tiger were in friendship, because they are found near each other. In America the bones of the rhinoceros and megalonyx are in the same vicinity: but I do not attribute this to any former friendship that existed between them. The truth is, the rhinoceros loves to wallow in the mire, and, on that account, frequents salines and the banks of rivers: the megalonyx, to quench his thirst, or find his prey, remained contiguous to the same places.

Nor do I stand alone in the opinion, that animals of the lion race have inhabited America; and though M. Buffon even denies the panther to belong to that country, Mr. Pennant thinks, that the same, or a variety at least, inhabits it. The figure of the species described by Faber, under the name of *tigris Mexicana*, agrees exactly with that of the panther, as does also the description in general. M. Condamini, and Le Pere Cattano, speak of the tigers of America as equal and even superior in size to those of Africa, and the colour as bright as gold; and Ulloa describes them as big as a horse! Notwithstanding the venders of furs

cannot be depended upon, as to the countries their goods come from, yet the general opinion of the whole trade, that these skins were the produce of Spanish America, is a further proof of their being common to both continents.

From the remains, then, before us; from all the foregoing remarks; and, above all, from the conviction that the megalonyx is of the lion kind, let us form to ourselves some idea of his character.

His length 60 ft. his height 25; his figure magnificent; his looks determined; his gait stately; his voice tremendous! In a word, his body must have been the best model of deadly strength, joined to the greatest agility. And, from the force expressed by the visible seat of his muscles, his bounds must have been prodigious, enabling him to fall upon his prey, to seize it with his teeth; tear it with his claws, and devour it. Accustomed to measure his strength with that of all other animals he used to encounter, the habit of conquering must have rendered him haughty and intrepid!

Having, perhaps, never experienced the

strength of man, or the power of his arms, instead of discovering any signs of fear, he would disdain and set an army at defiance! Wounds might irritate, but they could not terrify him; and after a violent and obstinate engagement, should he find himself weakened, he would retreat fighting, always keeping his face to the enemy, looking proud, great, and ferocious.

THE END.

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